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EXAMINER
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SEVER, ANDREW T

ART UNIT	PAPER NUMBER
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2851

DATE MAILED: 12/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/723,235

Applicant(s)

OROSS ET AL.

Examiner

Andrew T Sever

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 and 21-42 is/are rejected.
- 7) ☒ Claim(s) 20 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 November 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 11/26/2003.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

**DETAILED ACTION*****Drawings***

1. The drawings are objected to because the specification on page 2 suggests that the light engine (part 24) is shown in figures 1-3, however no part 24 is labeled and the office does not believe that it is literally shown in figures 1-3. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 33 (light source, as called for on page 3 of the specification). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any

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amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The light source is labeled 32.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 5, 7-12, 14-16, 27, 28, 30-34, 36, 37, and 42 are rejected under 35 U.S.C. 102(b) as being anticipated by Rodriguez et al. (US 5,820,242.)

Rodriguez teaches in figures 2A and 2B) a portable projector, comprising

A light engine (52); and

A projector housing having a closed configuration (figure 2A) and an open configuration (figure 2B), wherein, in the closed configuration, the projector housing at least partially encloses the light engine, and in the open configuration, the projector housing supports the light engine.

*With regards to applicants claim 5:*

Rodriguez teaches in column 4 lines 45-50 that alternatively projector and accordingly the light engine could use a reflective optical system instead of the Fresnel and lens based optical system shown in the figures.

*With regards to applicant's claim 7:*

The light engine has a housing (see column 5 line 54.)

*With regards to applicant's claim 8:*

Since the housing of the light engine would surround it, inherently the projector housing which supports the light engine is in fact directly supporting the light engine housing.

*With regards to applicant's claims 9-12 and 14:*

See figure 2B, which shows that the light engine housing is supported by the doors in a vertical direction as well as a pivoting device 58 in a horizontal direction.

*With regards to applicant's claim 15:*

The housing includes a clamshell structure (the door opens in a manner similar to a clamshell.)

*With regards to applicant's claim 16:*

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Inherently heat dissipation is enhanced in the open configuration since that projector is inoperative in the closed configuration and not in use and therefore heat dissipation is not an issue. (Rodriguez primary heat dissipation system; fans, would not even be active when the projector is in storage.)

*With regards to applicant's claim 27, 28, 30-34, 36, and 37:*

The method of using and manufacturing the projector taught by Rodriguez is inherent given that it is useful and exists. (See MPEP 2112.02) Also see columns 1 and 2 which teaches what a projector such as Rodriguez is used for (projecting images from a source of image data specifically from an associated computer as claimed in applicant's claims 30 and 31.

*With regards to applicant's claim 42:*

See above (specifically with regards to claim 1.)

5. Claims 1, 7, 8, 11, 12, 14, 16, 27, 28, 30-34, 37, and 42 are rejected under 35 U.S.C. 102(b) as being anticipated by Chino et al. (US 6,334,687.)

Chino et al. teaches in figures 1 and 6

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A portable projector, comprising:

A light engine (20); and

Projector housing having a closed configuration (figure 6) and an open configuration (figure 1), wherein, in the closed configuration, the projector housing at least partially encloses the light engine, and in the open configuration, the projector housing supports the light engine (see column 4 lines 3-22 which teaches that when not in use the light engine is disposed within the housing 100 and when in use is removed and supported by the housing 100).

*With regards to applicant's claim 7:*

Clearly the light engine (20) is enclosed in a housing (300).

*With regards to applicant's claim 8:*

The housing (100) is a support for the light engine housing when in the open configuration.

*With regards to applicant's claim 11:*

The housing serves as a horizontal support.

*With regards to applicant's claim 12:*

As described in column 4 lines 3-22 part 100 includes a lid (150), which is a first portion while the base (110) is a second portion, which is pivotally connected. When the

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projector is converted between and open and closed configuration the connection is rotated (the lid is opened to let out the light engine or to place the light engine back into the housing whichever is appropriate.)

*With regards to applicant's claim 14:*

As can clearly be seen both portions remained coupled to the light engine in the open configuration.

*With regards to applicant's claim 16:*

Clearly the light engine housing would dissipate heat more efficiently in the open configuration.

*With regards to applicant's claims 27, 28, and 33 :*

The method of using the projector of Chino is inherent. (See MPEP 2112.02)

*With regards to applicant's claims 30-32:*

See immediately above and further see column 4 lines 3-22 which teach that the light engine projects an image from an image data source which can comprise a computer.

*With regards to applicant's claims 34 and 37:*



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The method of manufacturing the projector of Chino is inherent given that the projector exists, it must have been manufactured at least once. (With regards to claim 37, it is inherent that the light engine of Chino is functional when deployed in the operative state.)

*With regards to applicant's claim 42:*

The portable projector of Chino includes projection means (light engine 20 see above) and housing means (100).

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 2-4, 13, 17-19, 21-24, 29, 35 and 38-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chino et al. as applied to claims 1, 7, 8, 11, 12, 14, 16, 27, 28, 30-34, 37, and 42 above, and further in view of Wang et al. (US 2004/0141155.)

As described in more detail above Chino teaches a portable projector, method of using said projector and method of manufacturing said projector. Among other things Chino teaches a light engine, however, Chino does not teach that the light engine has a compact state and an expanded state. Wang teaches in paragraphs 11-13 a light engine, which has

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a compact state and an expanded state. Wang teaches in paragraph 8 and 10 that this is desirable since in the compact state the projector is miniaturized, but can be expanded reducing noise from cooling fans, which allow for better cooling. Given that Chino is desirous of having as compact a projector during storage as possible and given it is desirable during projection to have as least amount of noise generated by the light engine as possible, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the light engine of Wang in the portable projector of Chino.

*With regards to applicant's claim 3 and 4:*

Paragraph 26 clearly teaches that the light engine of Wang is not used when in the compact state and one of ordinary skill in the art would recognize that in the operative state (expanded state) the optical components would be properly aligned for operation (else it would not be operative).

*With regards to applicant's claim 13:*

One of ordinary skill in the art would recognize that since Wang teaches in paragraph 28 that the light engine is converted in one embodiment manually that at least in that condition, it would require the housing as taught by Chino to be in the open configuration so that the user could access the light engine. Never-the-less even in the automatic conversion embodiment, one of ordinary skill in the art would recognize that since the stated purpose is to make both the projector and the light engine as compact as possible in the storage/closed configuration; it would not be obvious to allow the light engine to be

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able to be in the expanded state while the projector housing is in the closed configuration. Accordingly it would have been obvious to one of ordinary skill in the art at the time the invention was made to have the conversion of the closed configuration of the projector housing to the open configuration of the projector housing permit the light engine to be converted from a compact state to an expanded state.

*With regards to applicant's claims 17, 18, 21-24, and 38-40:*

See above.

*With regards to applicant's claim 19*

Clearly the projection optics of Chino are disposed adjacent the top of the light engine housing in the open configuration as shown in figure 1 (see figure 2, which shows the projection lens 22).

*With regards to applicant's claims 29 and 35:*

The method of using and making the projector of Chino in view of Wang is obvious.

*With regards to applicant's claim 41:*

Chino discloses a display surface 500.

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8. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chino as applied to claims 1, 7, 8, 11, 12, 14, 16, 27, 28, 30-34, 37, and 42 above, and further in view of Milinusic et al. (US 6,609,798.)

As described in more detail above Chino teaches a portable projector, which includes a light engine, however Chino does not teach in great detail the specific contents of that light engine. Specifically Chino does not teach that the light engine includes reflective optics. Milinusic teaches a light engine in figure 1a, which utilizes reflective optics 140 and 120. Milinusic teaches in column 1 lines 10-15 using such optics allows for increased light throughput or entendue in projectors utilizing Digital light projecting (DLP). Given that DLP systems are increasingly common in light engines and given Milinusic's teachings that a reflective based light engine as taught by Milinusic has increased light throughput, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use Milinusic's light engine with reflective optics for the light engine of Chino.

9. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rodriguez et al. as applied to claims 1, 5, 7-12, 14-16, 27, 28, 30-34, 36, 37, and 42 above, and further in view of Levis et al. (US 5,829,858.)

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As described in more detail above Rodriguez teaches a portable projector which among other things includes a light engine having optical components which are specifically taught to be Fresnel lenses, however Rodriguez does not teach that these refractive elements (Fresnel lenses are refractive elements) are made of polymer. Levis teaches in column 4 lines 55-64 that Fresnel lenses are plates having concentric grooves molded as a thin plastic sheet that replace curved surfaces of conventional lenses. Accordingly given it is well known that Fresnel lenses are generally made of plastic (a polymer) as taught by Levis it would have been obvious to one of ordinary skill in the art at the time the invention was made to use polymer Fresnel lenses for the Fresnel lenses of Rodriguez.

10. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chino as applied to claims 1, 7, 8, 11, 12, 14, 16, 27, 28, 30-34, 37, and 42 above, and further in view of Levis et al. (US 5,829,858.)

As described in more detail above, Chino teaches a portable projector having a light engine, however Chino does not teach the details of said light engine. Levis teaches in figure 1 a light engine, which includes polymer-refractive optics (Fresnel lenses see column 4 lines 55-64). Levis teaches in column 1 lines 36-47 as well as column 2 lines 25-44 that the light engine taught by Levis is an improvement over prior art light engines allowing for reduce “spillage” and better coverage of the entire image area, so that even the corners of a HDTV image are as bright as the center. Given that these are desirable goals in projecting, it would have been obvious to one of ordinary skill in the art at the

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time the invention was made to use the light engine of Levis, which includes polymer refractive elements in the projector of Chino.

11. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chino in view of Wang as applied to claims 2-4, 13, 17-19, 21-24, 29, 35, and 38-41 above, and further in view of Milinusic et al. (US 6,609,798.)

As described in more detail above Chino in view of Wang teaches a portable projector, which includes a light engine, however Chino in view of Wang does not teach in great detail the specific contents of that light engine. Specifically Chino does not teach that the light engine includes reflective optics. Milinusic teaches a light engine in figure 1a, which utilizes reflective optics 140 and 120. Milinusic teaches in column 1 lines 10-15 using such optics allows for increased light throughput or entendue in projectors utilizing Digital light projecting (DLP). Given that DLP systems are increasingly common in light engines and given Milinusic's teachings that a reflective based light engine as taught by Milinusic has increased light throughput, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use Milinusic's light engine with reflective optics for the light engine of Chino in view of Wang.

12. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chino in view of Wang as applied to claims 2-4, 13, 17-19, 21-24, 29, 35, and 38-41 above, and further in view of Levis et al. (US 5,829,858.)

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As described in more detail above, Chino in view of Wang teaches a portable projector having a light engine, however Chino in view of Wang does not teach the optical components of said light engine in much detail. Levis teaches in figure 1 a light engine, which includes polymer refractive optics (Fresnel lenses see column 4 lines 55-64). Levis teaches in column 1 lines 36-47 as well as column 2 lines 25-44 that the light engine taught by Levis is an improvement over prior art light engines allowing for reduce “spillage” and better coverage of the entire image area, so that even the corners of a HDTV image are as bright as the center. Given that these are desirable goals in projecting, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the optical components of the light engine of Levis, which includes polymer refractive elements in the light engine of Chino in view of Wang.

*Allowable Subject Matter*

13. Claim 20 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

14. The following is a statement of reasons for the indication of allowable subject matter: Projecting from the bottom of the light engine was not found in the prior art. This configuration is believed shown in applicant’s figure 8, where the top is being held to be the pivot point and the bottom to be the support points of the open housing (the doors support the projector and their bases would be the bottom.) Since the prior art always teaches that the projection lens is at a

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location away from the part the supports the light engine, claim 20 is indicated as being allowable if re-written in independent form including all of the limitations of the base claim 17.

### *Conclusion*

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

US 6,637,897 to Li et al. teaches in figure 1 and 2 a projector which includes a light engine 110 and a fold out screen. It does not appear to read on claim 20 since the light engine is not ever enclosed within any other part of the projector.

US 5,663,762 to Nishiyama teaches in figures 1 and 8 a film reader which has a clam shell support like that shown in applicant's figures. Nishiyama does include a light engine for reading the film, however Nishiyama is not a projector.

US 5,630,659 to Ronzani et al. teaches in figure 6 and 10A a projector which includes different attachments/housing configurations.

US 4,696,557 to Tomizuka

US 5,876,105 to Rodriquez Jr.



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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew T Sever whose telephone number is 571-272-2128. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on 571-272-2258. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AS



**JUDY NGUYEN**  
**SUPERVISORY PATENT EXAMINER**